

# **AIR FORCE**

## **QUALIFICATION TRAINING PACKAGE (AFQTP)**



**for**  
**PAVEMENTS AND CONSTRUCTION EQUIPMENT OPERATOR**

**(3E2X1)**

### **MODULE 8**

### **COMMUNICATIONS**

## TABLE OF CONTENTS

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### MODULE 8

### COMMUNICATIONS

#### AFQTP GUIDANCE

INTRODUCTION .....	8-3
--------------------	-----

#### AFQTP UNIT 1

USE RADIOS (8.1.) .....	8-4
-------------------------	-----

#### AFQTP UNIT 3

IDENTIFY AIRDROME SIGNALS (8.3.) .....	8-10
--	------

REVIEW ANSWER KEY .....	Key-1
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Career Field Education and Training Plan (CFETP) References from 1 May 97 version
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**AIR FORCE QUALIFICATION TRAINING PACKAGES**  
**for**  
**PAVEMENTS AND CONSTRUCTION EQUIPMENT OPERATOR**  
**(3E2X1)**

**INTRODUCTION**

*Before starting this AFQTP*, refer to and read the “Trainee/Trainer Guide” located on the AFCESA Web site <http://www.afcesa.af.mil/>

*AFQTPs are mandatory and must be completed* to fulfill task knowledge requirements on core and diamond tasks for upgrade training. *It is important for the trainer and trainee to understand* that an AFQTP does not replace hands-on training, nor will completion of an AFQTP meet the requirement for core task certification. AFQTPs will be used in conjunction with applicable technical references and hands-on training.

*AFQTPs and Certification and Testing (CerTest) must be used as minimum upgrade requirements for Diamond tasks.*

**MANDATORY minimum upgrade requirements:**

***Core task:***

AFQTP completion  
Hands-on certification

***Diamond task:***

AFQTP completion  
CerTest completion (80% minimum to pass)

**Note:** *Trainees will receive hands-on certification training for Diamond Tasks when equipment becomes available either at home station or at a TDY location.*

***Put this package to use.*** Subject matter experts under the direction and guidance of HQ AFCESA/CEOF revised this AFQTP. If you have any recommendations for improving this document, please contact the Career Field Manager at the address below.

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## COMMUNICATIONS

**MODULE 8**

**AFQTP UNIT 1**

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### USE RADIOS (8.1.)

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**USE RADIOS*****Task Training Guide***

<b>STS Reference Number/Title:</b>	8.1. Use Radios
<b>Training References:</b>	<ul style="list-style-type: none"><li>• AFI 33-106</li><li>• AFMAN 24-306</li><li>• AFOSH 127-46</li><li>• Local Procedures</li></ul>
<b>Prerequisites:</b>	<ul style="list-style-type: none"><li>• Possess as a minimum a 3E231 AFSC.</li></ul>
<b>Equipment/Tools Required:</b>	<ul style="list-style-type: none"><li>• Radio</li></ul>
<b>Learning Objective:</b>	<ul style="list-style-type: none"><li>• The trainee will be able to properly communicate utilizing a radio.</li></ul>
<b>Samples of Behavior:</b>	<ul style="list-style-type: none"><li>• The trainee will properly communicate utilizing a radio.</li></ul>

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## USE RADIOS

**Background:** Radios are very important pieces of equipment. They make it easier to communicate with others so that we can better accomplish our work. Since radios are such a valuable piece of equipment, we should utilize them properly. This means we must adhere to strict radio discipline. Radio discipline means that radios should only be used to transmit official messages. It also means that the radio network should not be saturated with unnecessary transmissions. Finally, radio discipline means you should never use obscene language, horseplay, or cut in when others are transmitting. Always keep in mind that radio nets are monitored under Federal Communications Commission (FCC) regulations. Therefore, we should use them properly.

Most of your radio communication will be with the air traffic control tower when you are performing sweeping operations on the flightline. You are required to contact the air traffic control tower before entering, when crossing, and after exiting the runway. Never enter the runway until you have received clearance from the tower to do so. If you are working on a crew or operating a piece of equipment without a radio, the supervisor in charge will have a radio. Keep in visual contact with the individual or vehicle that has the radio. They will provide the communication link between you and the personnel in the control tower.

It is very important for you to realize that personnel in the tower have an awesome job of controlling aircraft and vehicular traffic on the airfield. Their job is to coordinate movement and prevent collisions. You **MUST** keep them informed of your position at all times. If an aircraft approaches the runway, the control tower will notify you. Leave the active runway immediately by the closest exit or route that will allow proper clearing distance. Always keep an exit in mind. **KEEP ALERT!** Also, remember to inform the tower that you have cleared the runway.

In order to use the radio to communicate with the tower, simply depress the button on the side of the radio and speak into the microphone with a normal speaking voice. Do not hold the radio too close to your mouth; this will distort your voice. Always give the call sign of whom you are trying to reach first, then give your call sign. Don't transmit any information until you have received acknowledgment that contact has been established. When you receive information, always acknowledge the other party by repeating the information given to avoid confusion.

One example of proper radio procedure for a multi-purpose sweeper trying to get permission to enter the active runway is:

- **SWEEPER:** "Tower, this is Sweeper One."
- **TOWER:** "Sweeper One, this is Tower."
- **SWEEPER:** "Request permission to enter active runway from taxi-way 2W to begin sweeping operations."

**Continued on next page.**

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- **TOWER:** "Sweeper One, you have permission to enter the active runway and perform sweeper operations, advise when clear."
- **SWEEPER:** "Roger, understand I may enter the active runway to begin sweeper operation and will notify when clear."

Another example of proper communication between the sweeper and tower is:

- **SWEEPER:** "Tower, this is Sweeper One."
- **TOWER:** "Sweeper One, this is Tower."
- **SWEEPER:** "Request permission to enter active runway from taxi-way 2W to begin sweeping operations."
- **TOWER:** "Hold short Sweeper One."
- **SWEEPER:** "Roger, understand to hold short."

In this example the sweeper operator radioed for clearance to enter the active runway. The tower could not give them clearance at that moment, instead the sweeper was told to "hold short" or stay where you are at. Once the tower could authorize clearance they would radio the sweeper and give them clearance to proceed.

Once the sweeper is done and leaves the active runway, the operator radios the tower to inform them that the sweeper is clear of the runway. This is the proper way to accomplish this message:

- **SWEEPER:** "Tower, This is Sweeper One."
- **TOWER:** "Sweeper One, this is Tower."
- **SWEEPER:** "Sweeper One has cleared active runway on taxi-way 1 East."
- **TOWER:** "Roger, Sweeper One, Tower understands clear of active runway."

**NOTE:**

When operating vehicles with or without a radio, make frequent visual checks with the control tower. Watch for tower light signals as well.

**Review Questions  
for  
Use Radios**

Question	Answer
1. An example of proper radio discipline is to _____.	a. Horseplay with others b. Use obscene language c. Transmit official messages only
2. When making an attempt to contact another person, transmit your call sign then the call sign of who you are contacting.	a. True b. False
3. Clearance must be received from _____ to enter the runway.	a. Civil Engineer b. Control Tower c. Base Operations d. Base Commander
4. Always inform the tower when you are clear of the runway.	a. True b. False

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**USE RADIOS**

Performance Checklist		
Step	Yes	No
1. Transmitted call sign of who they are contacting?		
2. Transmitted personal call sign?		
3. Waited for acknowledgment?		
4. Transmitted information?		
5. Repeated transmissions received by repeating?		

**FEEDBACK:** Trainer should discuss with the trainee any items the trainer determined, the trainee did not successfully accomplish. Feedback should be immediate so the situations fresh in the mind of the trainee and the trainer.

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## COMMUNICATIONS

**MODULE 8**

**AFQTP UNIT 3**

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### IDENTIFY AIRDROME SIGNALS (8.3.)

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**IDENTIFY AIRDROME SIGNALS*****Task Training Guide***

<b>STS Reference Number/Title:</b>	8.3. Identify Airdrome Signals
<b>Training References:</b>	<ul style="list-style-type: none"><li>• AFI 33-106</li><li>• AFMAN 24-306</li><li>• AFOSH 127-46</li><li>• Local Procedures</li></ul>
<b>Prerequisites:</b>	<ul style="list-style-type: none"><li>• Possess as a minimum a 3E231 AFSC</li></ul>
<b>Learning Objective:</b>	<ul style="list-style-type: none"><li>• The trainee will be able to properly identify airdrome signals.</li></ul>
<b>Samples of Behavior:</b>	<ul style="list-style-type: none"><li>• The trainee will properly identify airdrome signals.</li></ul>

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## IDENTIFY AIRDROME SIGNALS

**Background:** Pavement Maintenance and Construction Equipment personnel are responsible for ensuring all streets, roads, and airfield pavements are kept in a serviceable condition. To ensure maximum safety when performing maintenance on the airfield, you must be familiar with the air traffic control signals associated with Air Force installations.

Air traffic control signals are standard throughout the Air Force. They serve as a back up to the radios used for communication between the tower and flightline vehicle traffic. Remember that you must be in constant contact with the control tower, either by radio or by light signals. The light signals, if used, are flashed from the control tower so that the vehicle operator can distinguish the message the control tower is trying to convey (Figure 1). Again, these lights are used primarily for non-radio equipped vehicles and as a backup in case of radio failure.

All Air Force vehicles that are subject to travel on the flightline are required to have a decal showing the airdrome traffic signals. The decal should be on the dashboard of all government vehicles working on the flight line. The operator can use the decal as a reference in the event the vehicle is not equipped with a two-way radio or the radio is malfunctioning.

The control tower uses the following visual signals.

- **Steady green light** - Cleared to cross.
- **Flashing green light** - Cleared to proceed and watch for lights.
- **Steady red light** - Stop.
- **Flashing red light** - Clear active runway.
- **Flashing white light** - Return to starting point.
- **Red and green light** - General warning, exercise extreme caution.

### TOWER SIGNALS FOR CONTROL OF AIRDROME TRAFFIC





STEADY GREEN 	CLEARED TO CROSS
FLASHING GREEN 	CLEARED TO PROCEED & WATCH FOR LIGHTS
STEADY RED 	STOP
FLASHING RED 	CLEAR ACTIVE RUNWAY
FLASHING WHITE 	RETURN TO STARTING POINT
RED & GREEN 	GENERAL WARNING EXERCISE EXTREME CAUTION

Figure 1, Air Traffic Control Signals.

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**NOTE:** In extreme circumstances, red and green flares may be used if radios or lights are not available. They should be interpreted in the same manner as red or green lights. It is very important that you understand and familiarize yourself with the airdrome traffic signals. Working on active runways or taxiways can be dangerous, especially if you have all your attention focused on what you are doing and not on the surrounding environment. Working on the flightline requires you to expand your attention beyond what you are doing. Your life depends on awareness of what is going on around you. You must be prepared to recognize and understand the signals from the control tower. Doing so will prevent accidents.

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## Review Questions for Identify Airdrome Signals

**Match the correct Airdrome Signal to the correct meaning for the following:**

Question	Answer
1. Clear active runway.	<ul style="list-style-type: none"> <li>a. Steady Red Light</li> <li>b. Steady Green Light</li> <li>c. Flashing White Lights</li> <li>d. Red and Green Lights</li> <li>e. Flashing Red Light</li> <li>f. Flashing Green Light</li> </ul>
2. Cleared to proceed and watch for lights.	<ul style="list-style-type: none"> <li>a. Steady Red Light</li> <li>b. Steady Green Light</li> <li>c. Flashing White Lights</li> <li>d. Red and Green Lights</li> <li>e. Flashing Red Light</li> <li>f. Flashing Green Light</li> </ul>
3. Cleared to cross.	<ul style="list-style-type: none"> <li>a. Steady Red Light</li> <li>b. Steady Green Light</li> <li>c. Flashing White Lights</li> <li>d. Red and Green Lights</li> <li>e. Flashing Red Light</li> <li>f. Flashing Green Light</li> </ul>
4. Return to starting point.	<ul style="list-style-type: none"> <li>a. Steady Red Light</li> <li>b. Steady Green Light</li> <li>c. Flashing White Lights</li> <li>d. Red and Green Lights</li> <li>e. Flashing Red Light</li> <li>f. Flashing Green Light</li> </ul>
5. General warning, exercise extreme caution.	<ul style="list-style-type: none"> <li>a. Steady Red Light</li> <li>b. Steady Green Light</li> <li>c. Flashing White Lights</li> <li>d. Red and Green Lights</li> <li>e. Flashing Red Light</li> <li>f. Flashing Green Light</li> </ul>
6. Stop	<ul style="list-style-type: none"> <li>a. Steady Red Light</li> <li>b. Steady Green Light</li> <li>c. Flashing White Lights</li> <li>d. Red and Green Lights</li> <li>e. Flashing Red Light</li> <li>f. Flashing Green Light</li> </ul>

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**IDENTIFY AIRDROME SIGNALS**

Performance Checklist		
Step	Yes	No
1. Identified all airdrome lights correctly?		

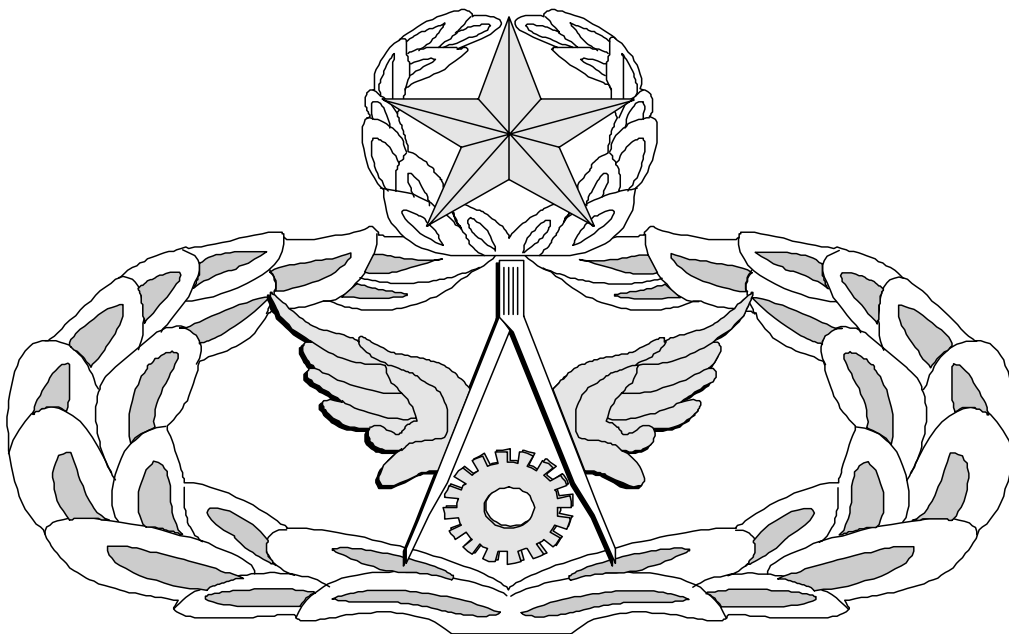
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# **Air Force Civil Engineer**

## **QUALIFICATION TRAINING PACKAGE (QTP)**

### **REVIEW ANSWER KEY**



**For**  
**PAVEMENTS & CONSTRUCTION EQUIPMENT OPERATIONS**

**(3E2X1)**

**MODULE 8**

**COMMUNICATIONS**

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**Key-1**



### USE RADIOS

**(3E2X1-8.1)**

Question	Answer
1. An example of proper radio discipline is to:	c. Transmit official messages only
2. When making an attempt to contact another person, transmit your call sign then the call sign of who you are contacting.	b. False
3. Clearance must be received from _____ to enter the runway.	b. Control Tower
4. Always inform the tower when you are clear of the runway	a. True

### IDENTIFY AIRDROME SIGNALS

**(3E2X1-8.3.)**

Question	Answer
1. Clear active runway.	e. Flashing Red Lights.
2. Cleared to proceed and watch for lights.	f. Flashing Green Lights.
3. Cleared to cross	b. Steady Green Light.
4. Return to starting point.	c. Flashing White Lights.
5. General warning, exercise extreme caution.	d. Red and Green Lights.
6. Stop.	a. Steady Red Light.

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